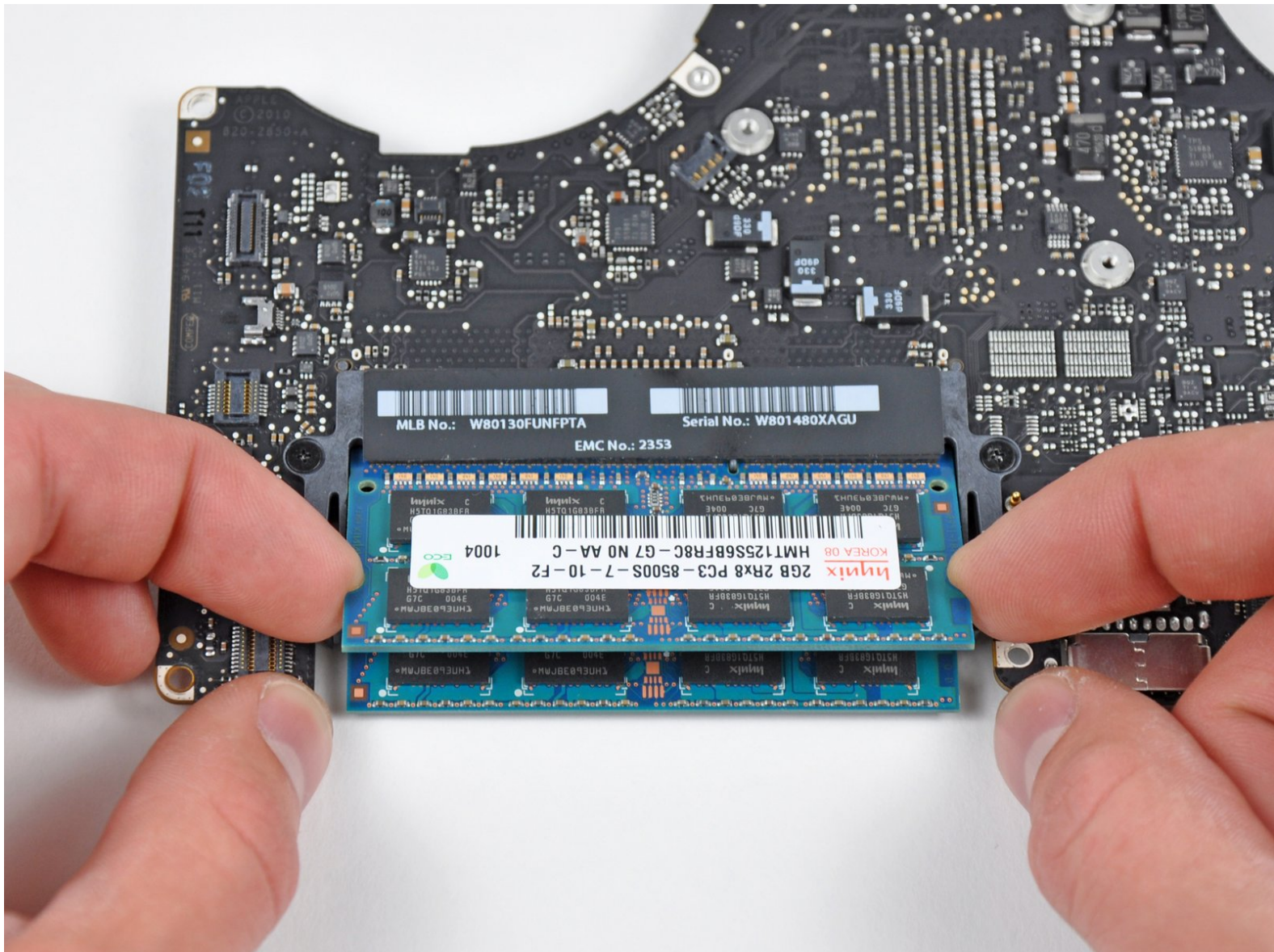




MacBook Pro 15" Unibody Late 2011 Logic Board Replacement

Replace the logic board in your MacBook Pro 15" Unibody Late 2011.

Written By: Miroslav Djuric



INTRODUCTION

Use this guide to replace your bare logic board. This requires removal of every component attached to the logic board.



TOOLS:

- [Arctic Silver ArctiClean](#) (1)
- [Arctic Silver Thermal Paste](#) (1)
- [Phillips #1 Screwdriver](#) (1)
- [Phillips #00 Screwdriver](#) (1)
- [Spudger](#) (1)
- [T6 Torx Screwdriver](#) (1)
- [Tri-point Y0 Screwdriver](#) (1)



PARTS:

- [MacBook Pro 15" Unibody \(Late 2011\) 2.2 GHz Logic Board](#) (1)
- [MacBook Pro 15" Unibody \(Late 2011\) 2.4 GHz Logic Board](#) (1)

Step 1 — Lower Case



- Remove the following ten screws securing the lower case to the upper case:
 - Three 13.5 mm (14.1 mm) Phillips screws.
 - Seven 3 mm Phillips screws.

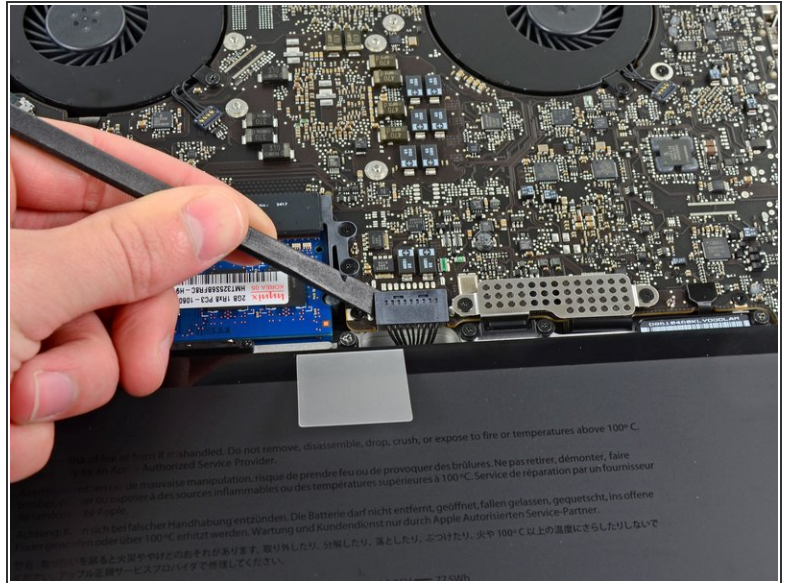
★ When removing these screws, note how they come out at a slight angle. They must be reinstalled the same way.

Step 2



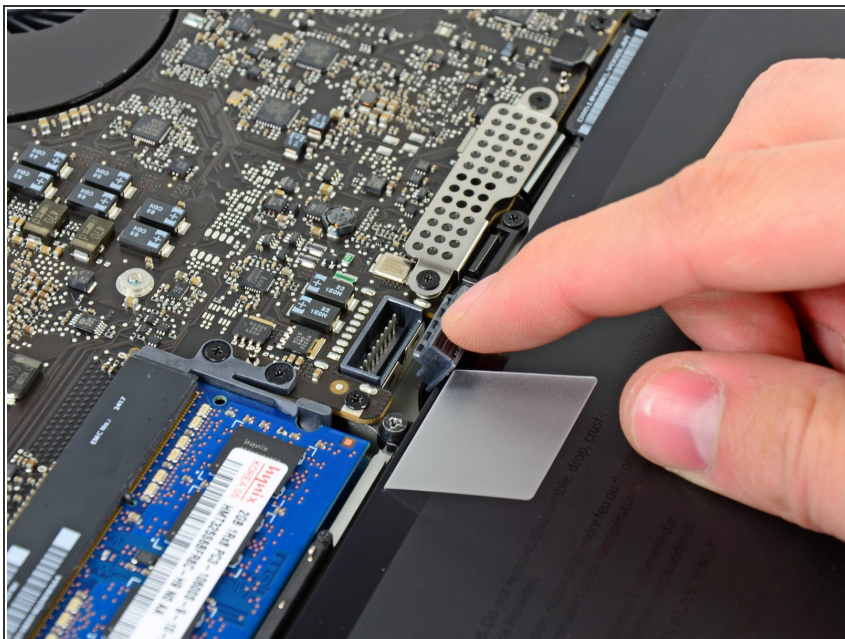
- Using both hands, lift the lower case near the vent to pop it off two clips securing it to the upper case.
- Remove the lower case and set it aside.

Step 3 — Battery Connector



- ☑ For certain repairs (e.g. hard drive), disconnecting the battery connector is not necessary but it prevents any accidental shorting of electronics on the motherboard. If you do not disconnect the battery connector, please be careful as parts of the motherboard might be electrified.
- Use the edge of a spudger to pry the battery connector upwards from its socket on the logic board.
- i It is useful to pry upward on both short sides of the connector to "walk" it out of its socket.

Step 4



- Bend the battery cable slightly away from its socket on the logic board so it does not accidentally connect itself while you work.

Step 5 — Battery



- Remove the two 7.4 mm Tri-point screws securing the battery to the upper case.

Step 6



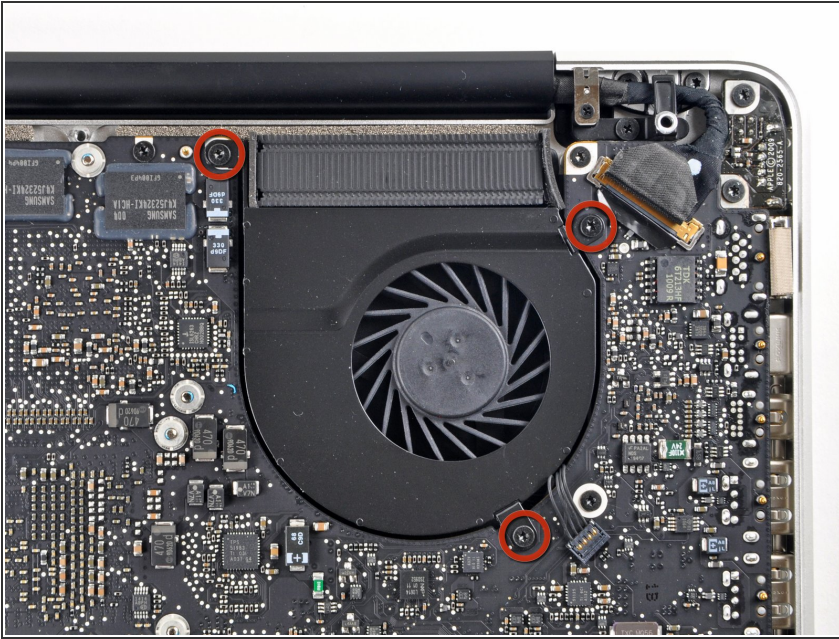
- Carefully peel the battery warning label off the upper case between the battery and the optical drive to reveal an additional Tri-point screw.
 - Remove the last 7.4 mm Y0 Tri-point screw securing the battery to the upper case.
- ⚠ Do not remove the label from the battery.

Step 7



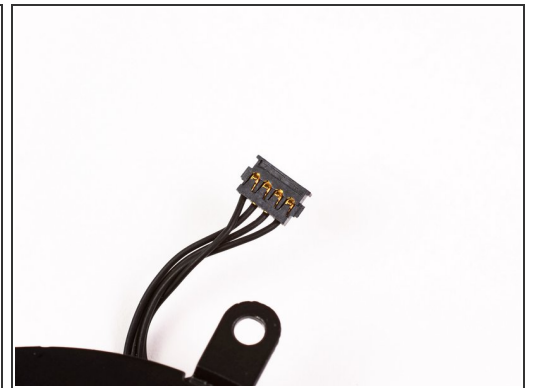
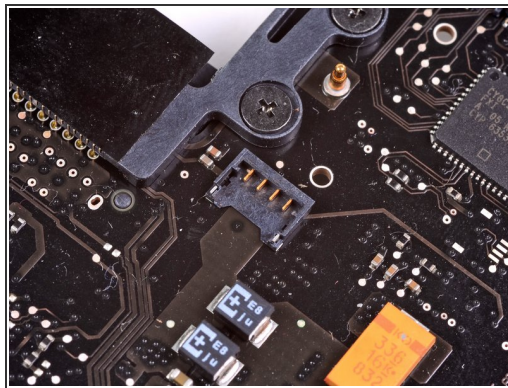
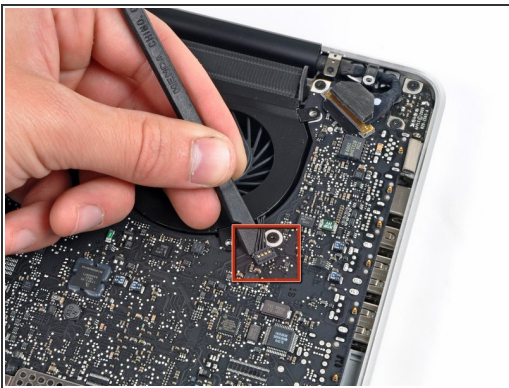
- Use the attached plastic pull tab to remove the battery from the upper case.
- ★ If you're installing a new battery, you should [calibrate](#) it after installation:
 - Charge it to 100%, and then keep charging it for at least 2 more hours. Next, unplug and use it normally to drain the battery. When you see the low battery warning, save your work, and keep your laptop on until it goes to sleep due to low battery. Wait at least 5 hours, then charge your laptop uninterrupted to 100%.
 - If you notice any unusual behavior or problems after installing your new battery, you may need to [reset your MacBook's SMC](#).

Step 8 — Left Fan



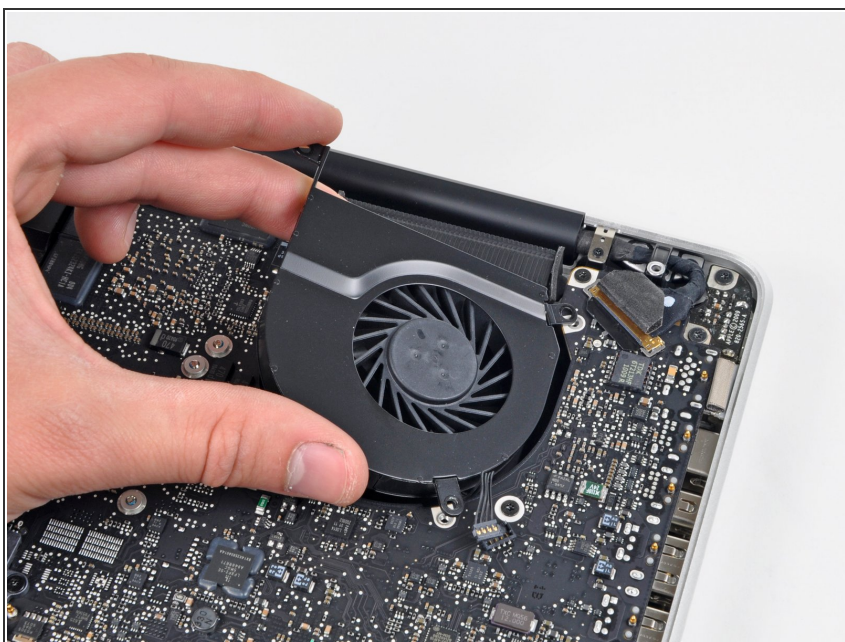
- Remove the three 3.4 mm T6 Torx screws securing the left fan to the logic board.
- ⓘ In some models, these T6 Torx screws may be 3.1 mm long.

Step 9



- Use the flat end of a spudger to disconnect the left fan connector from the logic board.
- ⓘ It is useful to twist the spudger axially from beneath the fan cable wires to release the connector.
- ⚠ The fan socket and the fan connector can be seen in the second and third pictures. Be careful not to break the plastic fan socket off the logic board as you use your spudger to lift the fan connector straight up and out of its socket. The layout of the logic board shown in the second picture may look slightly different than your machine but the fan socket is the same.

Step 10



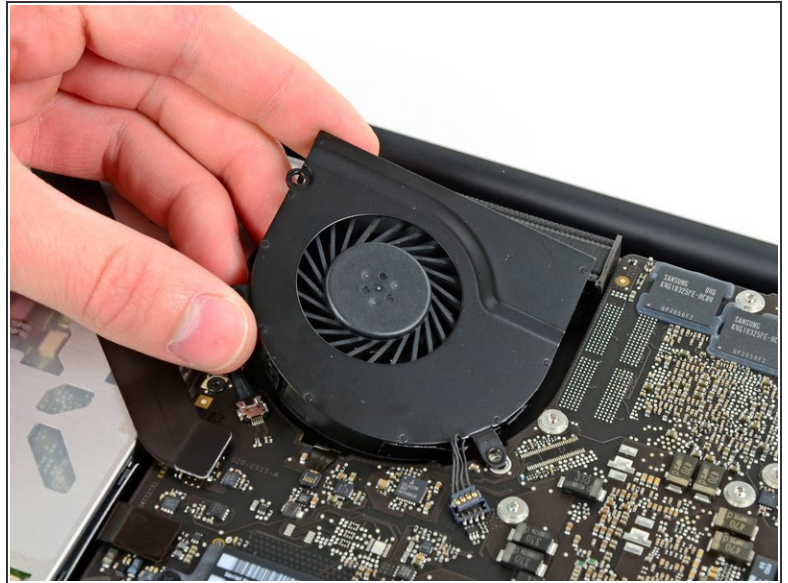
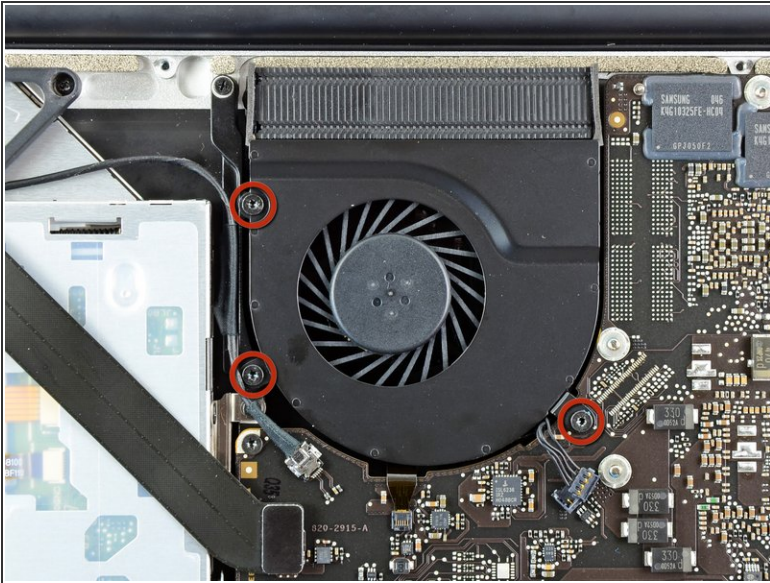
- Lift the left fan out of the upper case.

Step 11 — Logic Board



- Use the flat end of a spudger to lift the right fan connector out of its socket on the logic board.
- ⓘ It is useful to twist the spudger axially from beneath the fan cable wires to release the connector.

Step 12



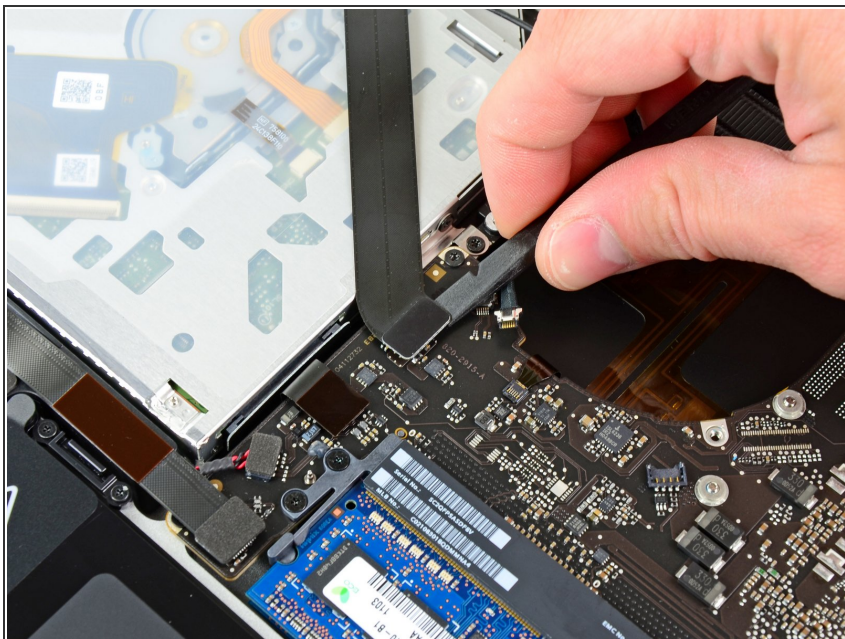
- Remove the three 3.4 mm (3.1 mm) T6 Torx screws securing the right fan to the logic board.
- Lift the right fan out of its opening in the logic board.

Step 13



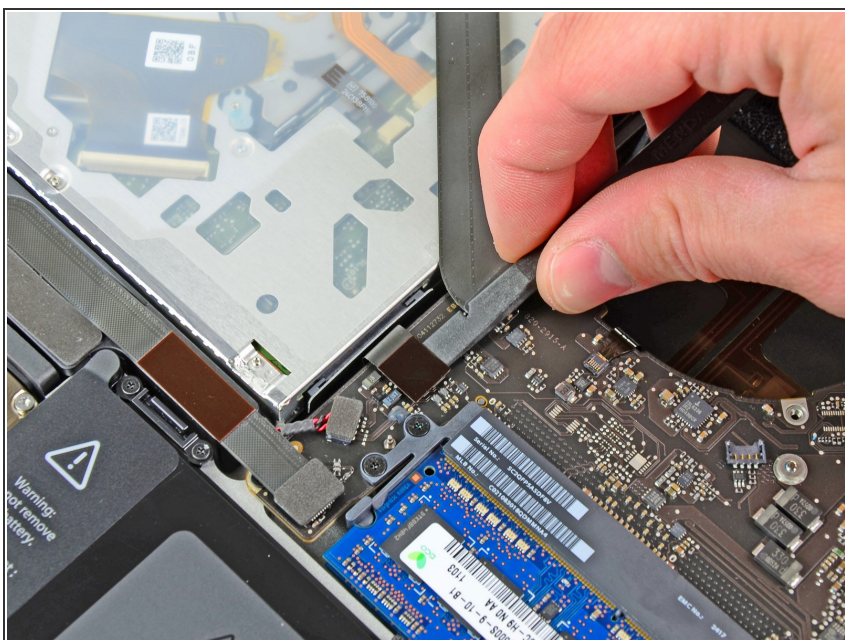
- Pull the camera cable out of its socket on the logic board.
- ⚠ Don't lift upward on the camera cable as you disconnect it. Pulling upward on the cable may damage both the cable and the logic board. Pull the cable parallel to the face of the logic board.

Step 14



- Use the flat end of a spudger to pry the AirPort/Bluetooth connector up from its socket on the logic board.

Step 15



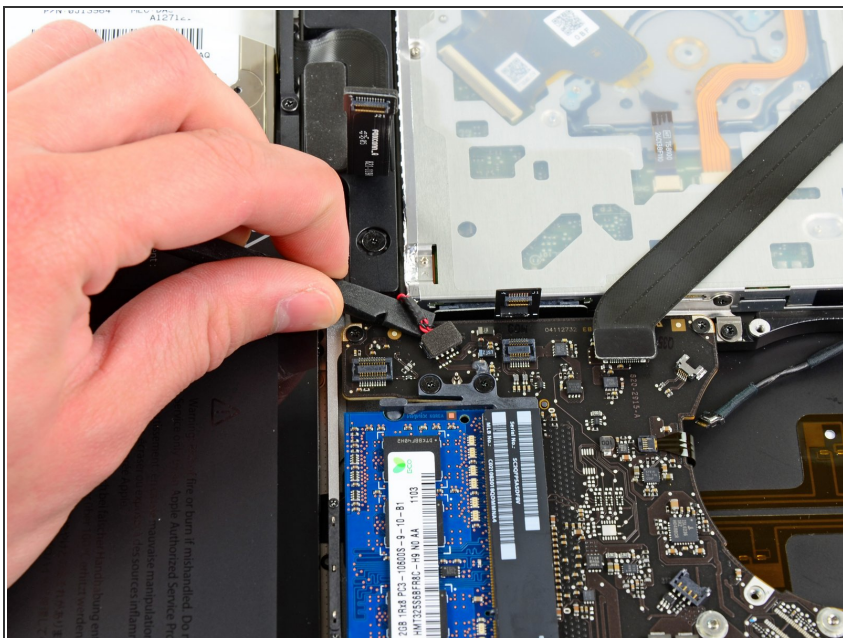
- Use the flat end of a spudger to lift the optical drive connector out of its socket on the logic board.

Step 16



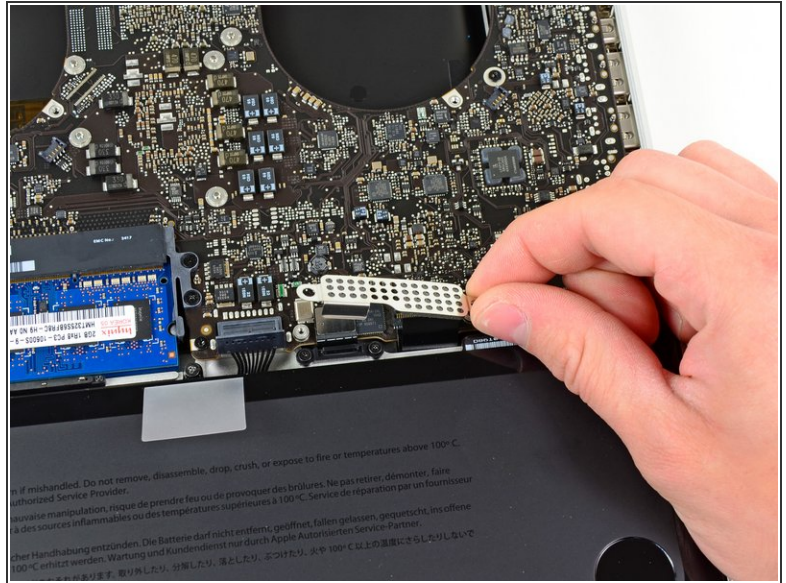
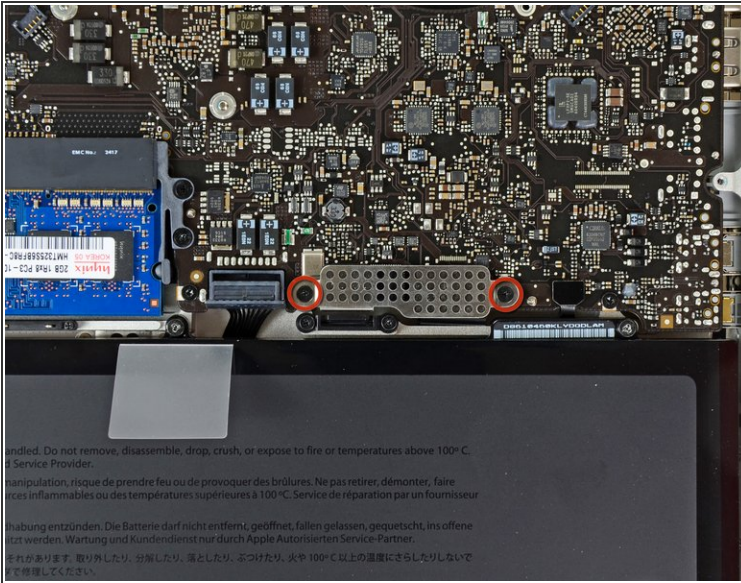
- Disconnect the hard drive/IR sensor cable from its socket on the logic board by lifting up from beneath its connector.

Step 17



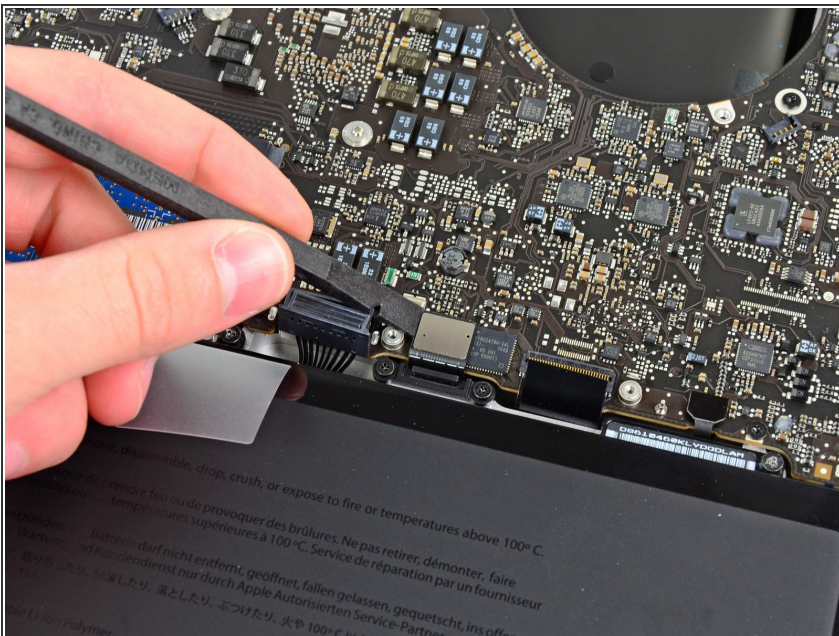
- Use the flat end of a spudger to lift the subwoofer/right speaker connector out of its socket on the logic board.
- ⓘ Pry up from beneath the wires.

Step 18



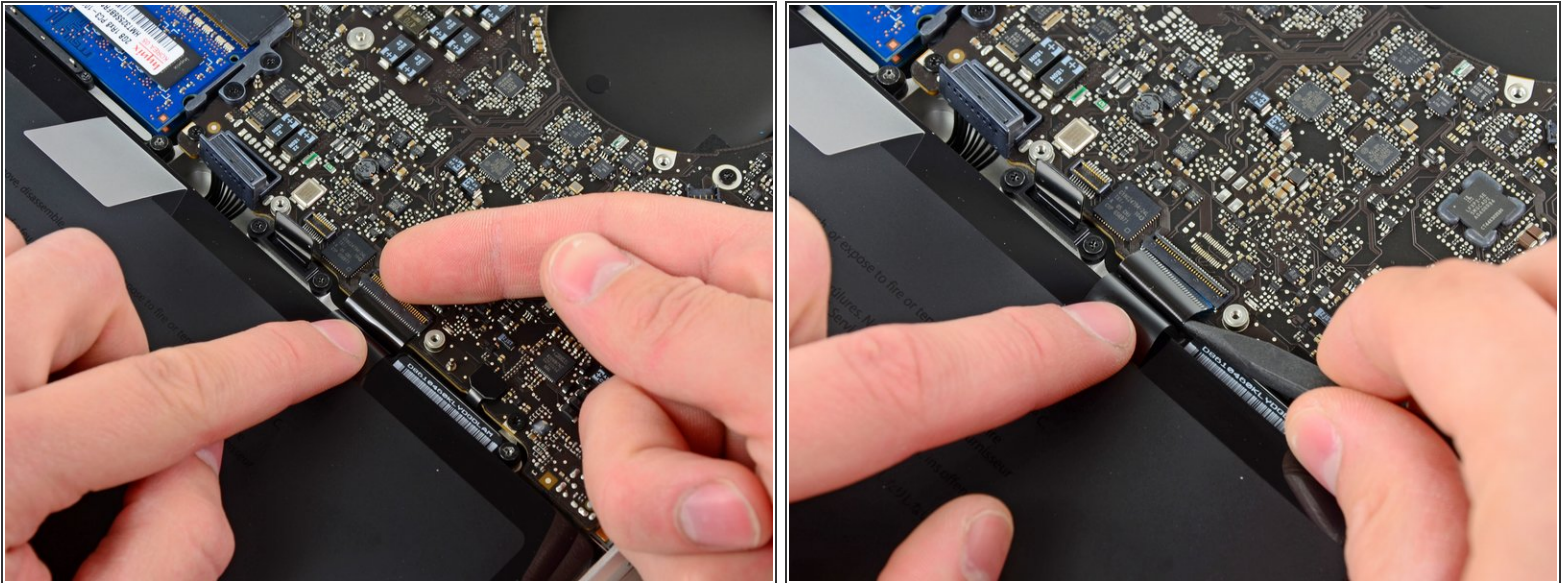
- Remove the two 1.5 mm (1.2 mm) Phillips screws securing the keyboard/trackpad cable cover to the logic board.
- Lift the cover off the logic board and set it aside.

Step 19



- Use the flat end of a spudger to pry the trackpad connector up and out of its socket on the logic board.

Step 20

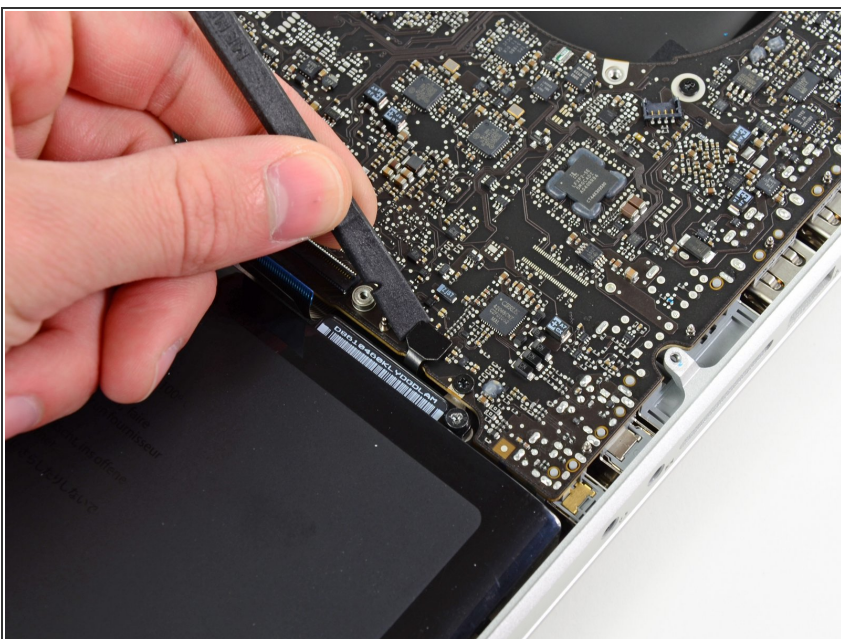


- Use your fingernail to flip up the retaining flap on the keyboard ribbon cable ZIF socket.

⚠ Be sure you are prying up on the hinged retaining flap, **not** the socket itself.

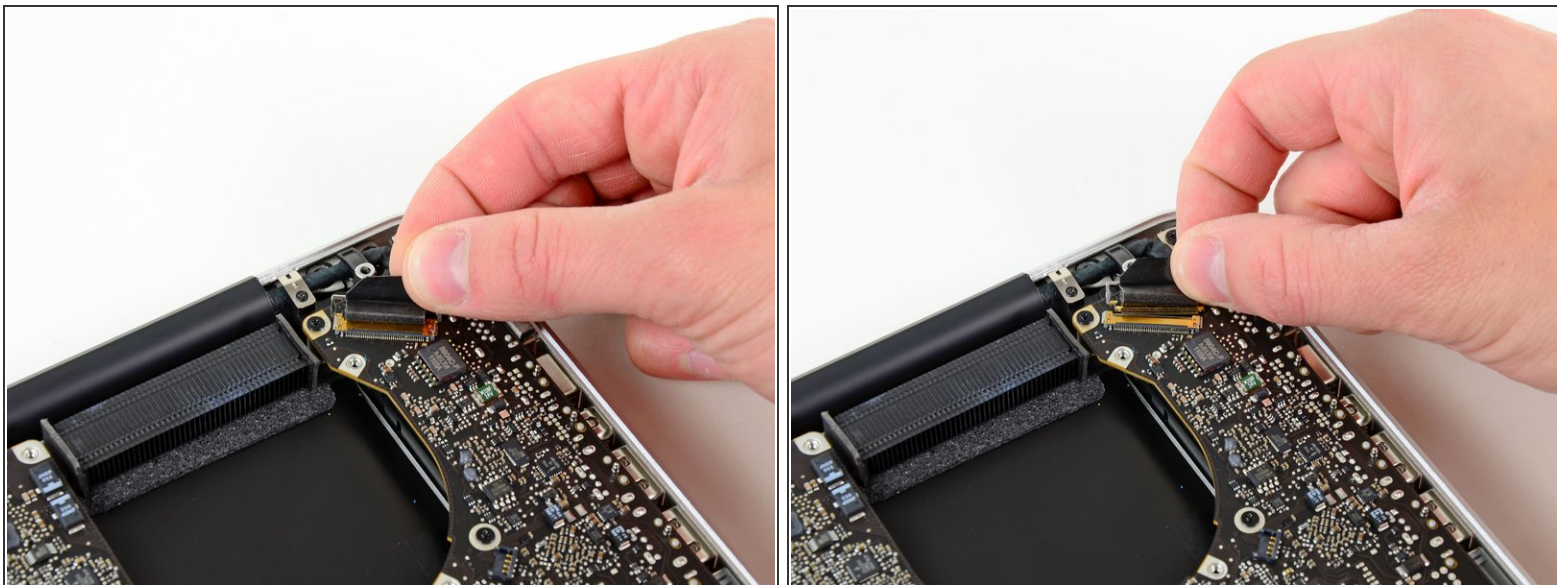
- Use the tip of a spudger to pull the keyboard ribbon cable out of its socket.

Step 21



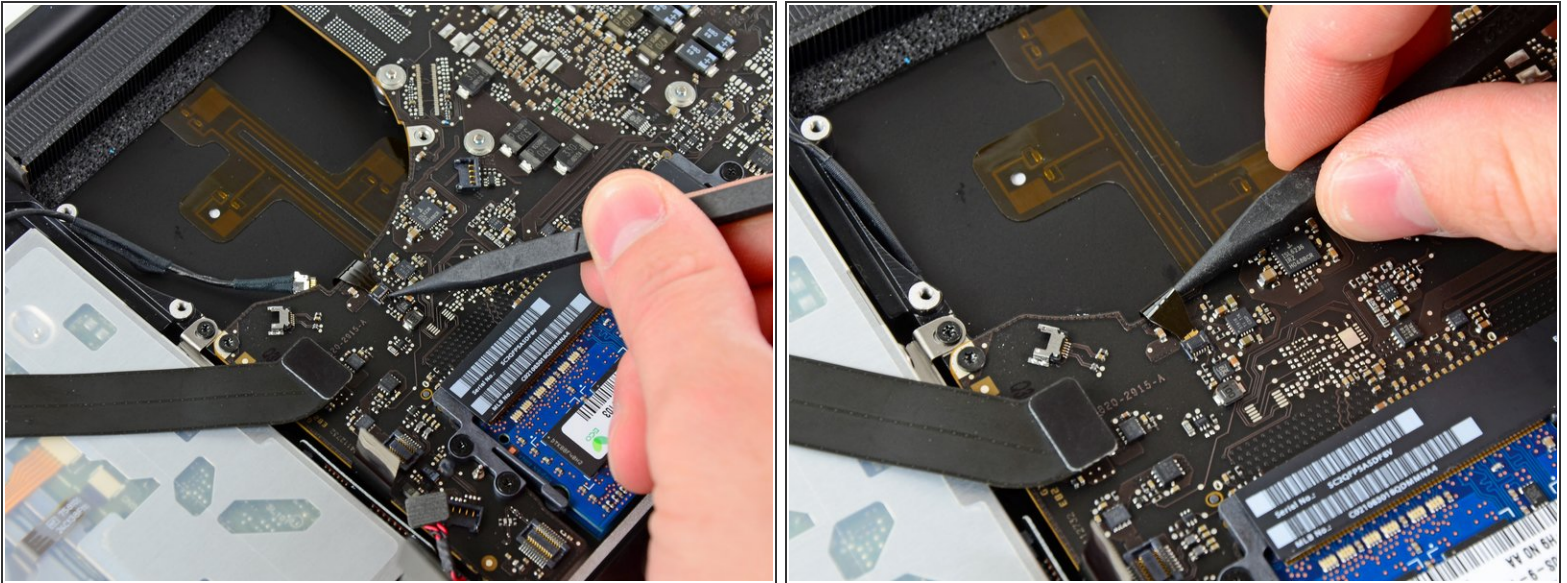
- Use the flat end of a spudger to lift the battery indicator connector up and out of its socket on the logic board.

Step 22



- Grab the plastic pull tab secured to the display data cable lock and rotate it toward the DC-In side of the computer.
 - Pull the display data cable straight out of its socket on the logic board.
- ⚠ Do not lift up on the display data cable, as its socket is very fragile. Pull the cable parallel to the face of the logic board.

Step 23



- Use the tip of a spudger to flip up the retaining flap on the keyboard backlight ribbon cable ZIF socket.

⚠ Be sure you are flipping up the hinged retaining flap, **not** the socket itself.

- Pull the keyboard backlight ribbon cable out of its socket.

Step 24



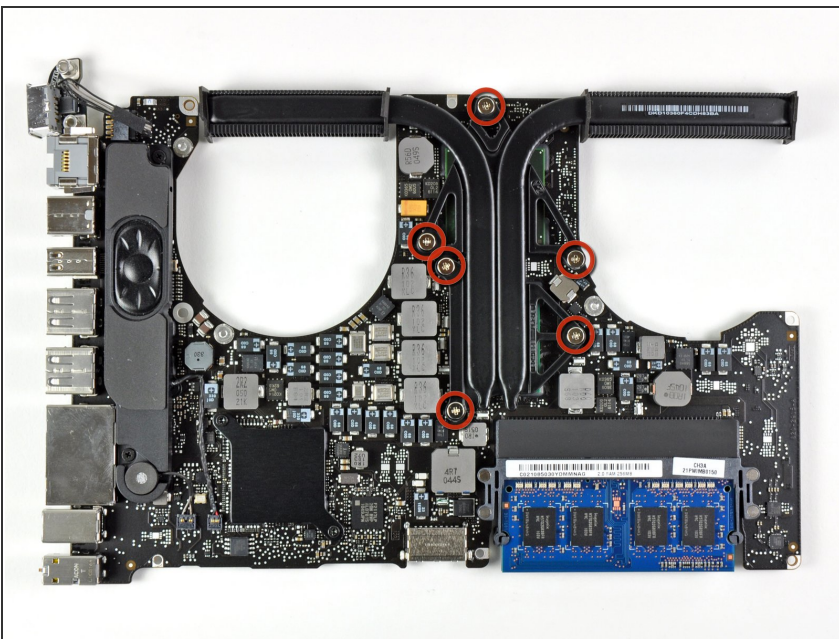
- Remove the following nine screws:
 - Seven 3.4 mm (3.1 mm) T6 Torx screws on the logic board
 - Two 8 mm T6 Torx screws on the DC-In board

Step 25



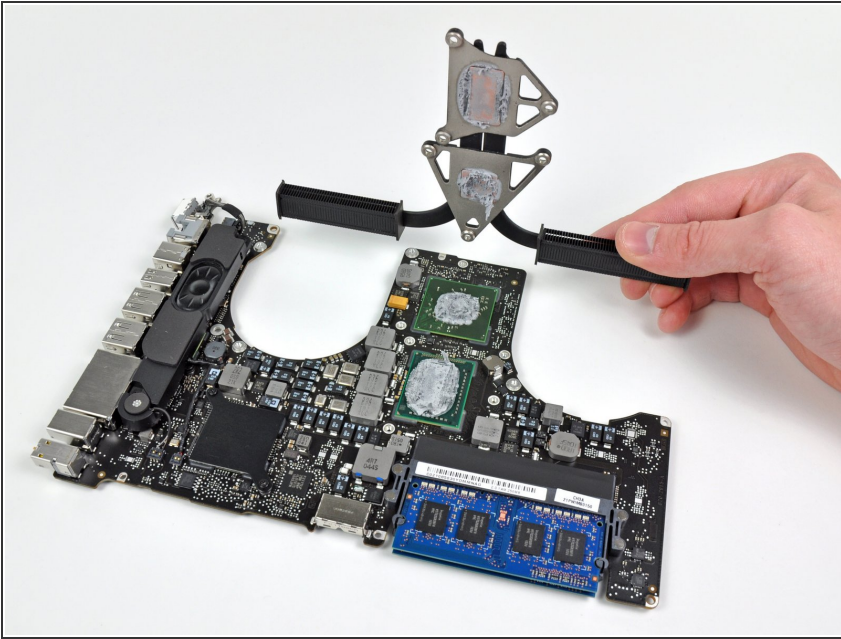
- Carefully lift the logic board assembly from its left side and work it out of the upper case, minding the optical drive cable and the I/O ports that may get caught during removal.
- If necessary, use the flat end of a spudger to separate the microphone from the upper case.
- Pull the I/O port side of the logic board away from the side of the upper case and remove the logic board assembly.

Step 26 — Heat Sink



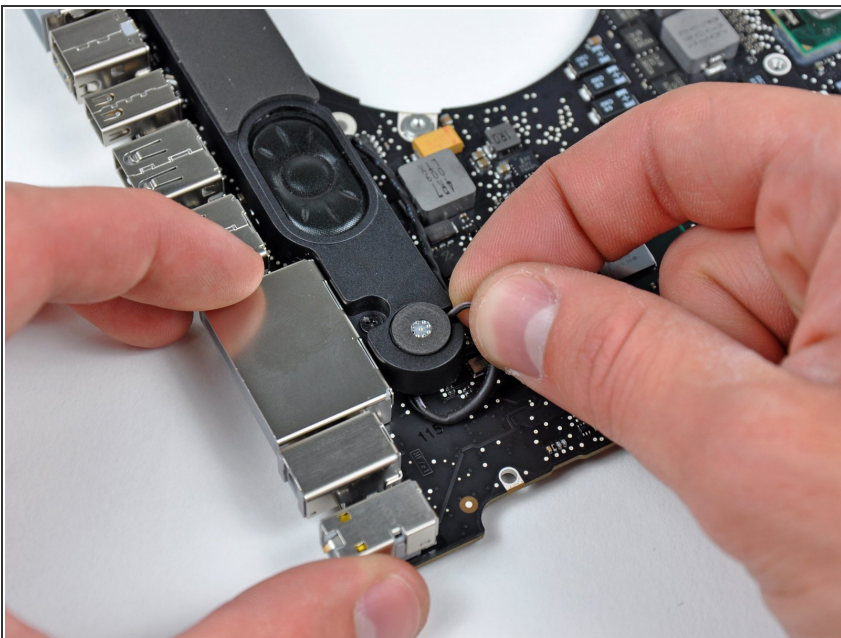
- i Lay the logic board down on a soft flat surface with the heat sink facing up.
- Remove the six #1 Phillips screws securing the heat sink to the logic board.
- i Keep track of the small springs housed under each screw.

Step 27



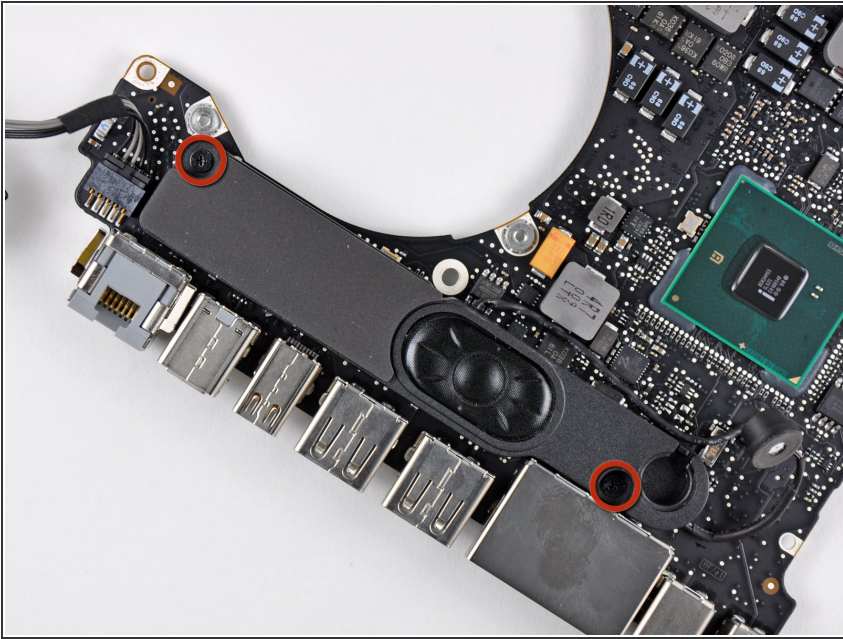
- Remove the heat sink from the logic board.
- ⓘ If the heat sink appears to be stuck to the logic board after removing all six screws, it may be helpful to use a spudger to separate the two components.
- ★ If you need to mount the heat sink back onto the logic board, we have a [thermal paste guide](#) that makes replacing the thermal compound easy.

Step 28 — Logic Board



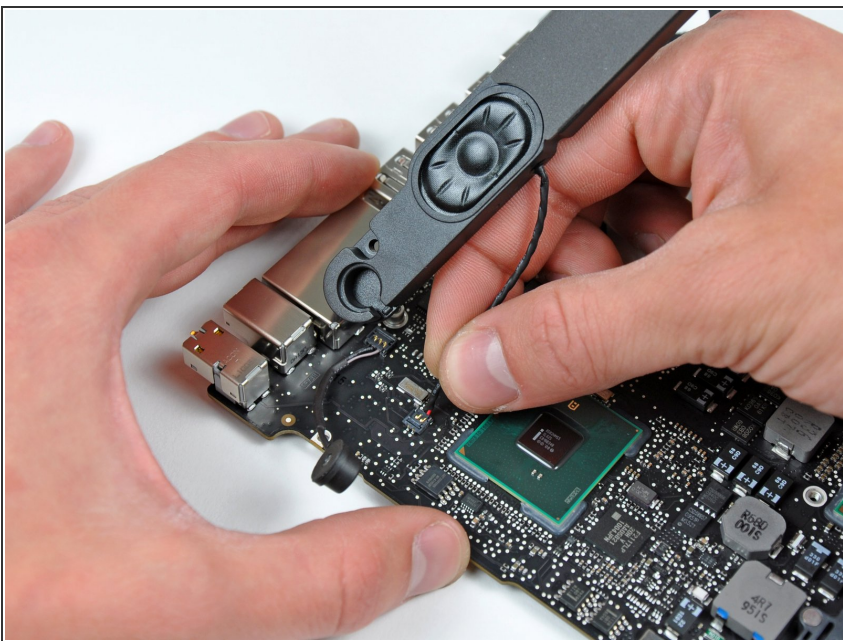
- ⓘ If necessary, lift the microphone out of its recess in the left speaker housing.

Step 29



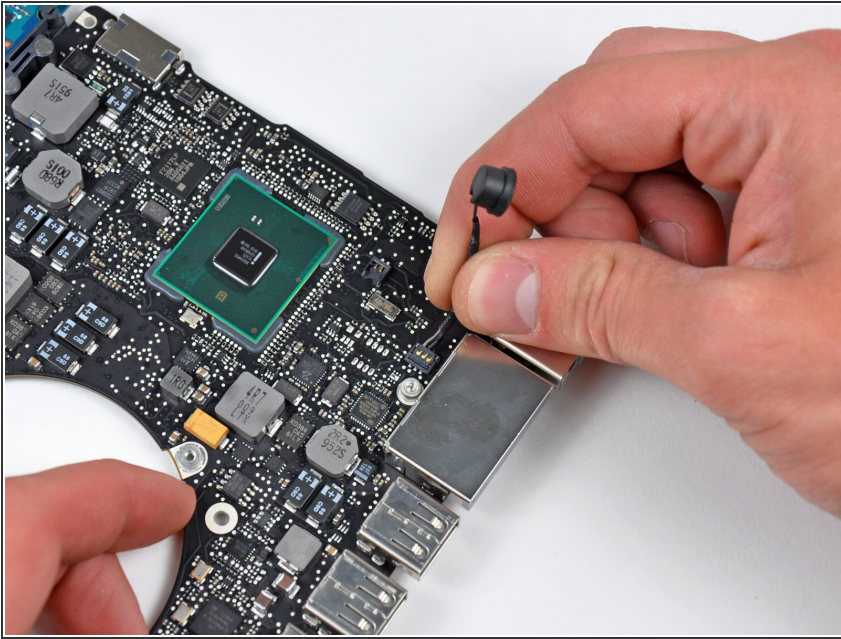
- Remove the two 5 mm Phillips screws securing the left speaker to the logic board.

Step 30



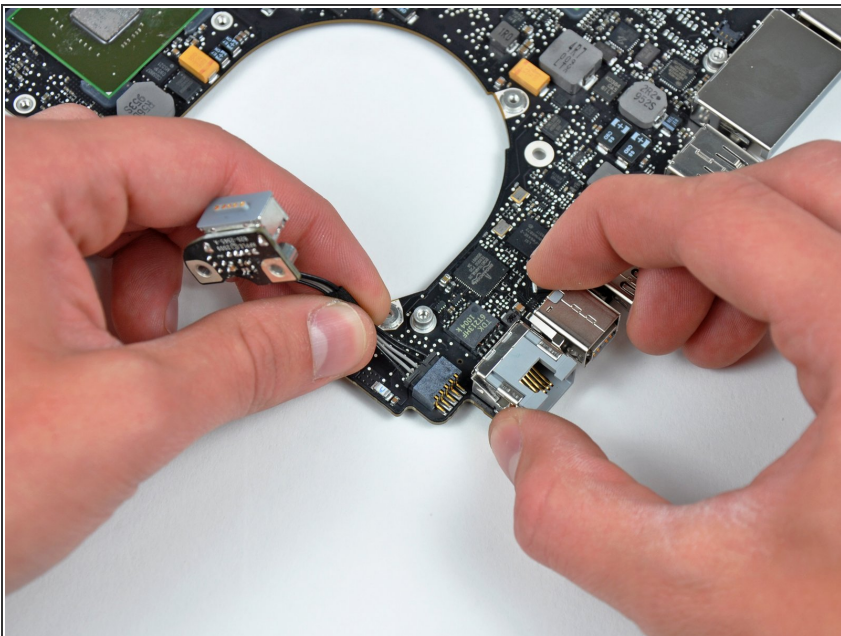
- ⓘ If present, remove the small strip of black tape covering the left speaker connector.
- Carefully pull the left speaker wires upward to lift the left speaker connector out of its socket on the logic board.

Step 31



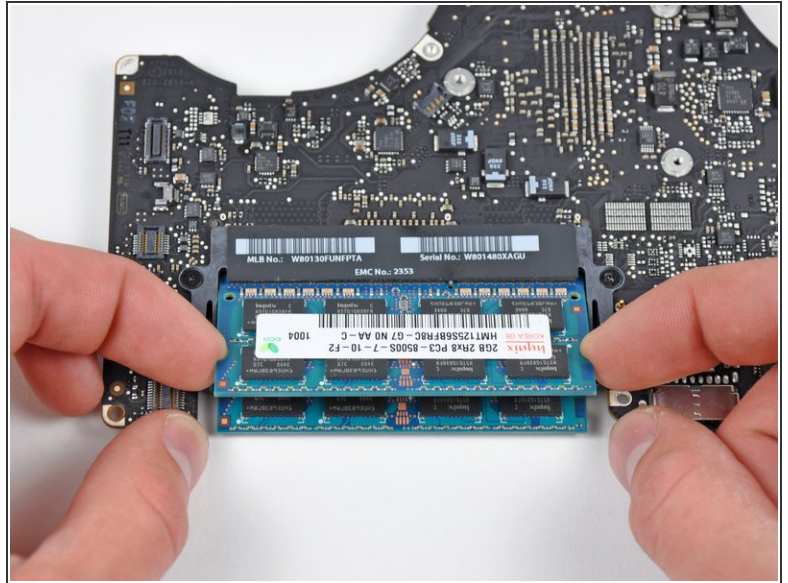
- Carefully pull the microphone cables upward to lift the microphone connector out of its socket on the logic board.

Step 32



- Pull the DC-In board cables toward the heat sink to disconnect the DC-In board from its socket on the logic board.
- ⓘ Pull the cables parallel to the face of the logic board.

Step 33



- Release the tabs on each side of the RAM chip by simultaneously pushing each tab away from the RAM.
- ⓘ These tabs lock the chip in place and releasing them will cause the chip to "pop" up.
- After the RAM chip has popped up, pull it straight out of its socket.
- ✦ Repeat this process if a second RAM chip is installed.
- Logic board remains.
- If you need to mount the heat sink back onto the logic board, we have a [thermal paste guide](#) that makes replacing the thermal compound easy.

To reassemble your device, follow these instructions in reverse order.